

**Amendments to the Claims:**

1. (Currently Amended) An apparatus suitable for equalizing a spectrum of a broadband light source, suitable for use with an optical power source, comprising:  
a first optical path and a second optical path;

an optical splitter being connectable to [[an]] the optical power source, for directing at least part of optical power from the optical power source to each of the first and second optical paths;

an optical a Long Period Grating (LPG) filter provided in the first optical path for filtering the optical signal propagating there through;

an adjustable gain amplifier provided in the second optical path to amplify to a varying degree, the optical signal propagating there through; and

an optical combiner for combining at least part of the optical signals from each of the first and second paths into an output channel.

2. (Currently Amended) An apparatus as claimed in claim 1 wherein the optical splitter is tunable to direct at least part of the optical power from the optical source to each of the first and second paths, in varying proportions.

3. Canceled.

4. (Currently Amended) An apparatus as claimed in claim [[3]] 1 wherein the adjustable gain amplifier has a gain of greater than 1 or less than 1, where a gain less than 1 attenuates the optical signal propagating through the second path and a gain of greater than 1 amplifies the original signal propagating through the second path.

5. (Previously Presented) An apparatus as claimed in claim 1 wherein the optical combiner is a 3dB fixed optical coupler for directing half the optical power from the first path and half the optical power from the second path into the output channel.

6. Canceled.

7. (Previously Presented) An apparatus as claimed in claim 1 wherein the optical filter has an attenuation band corresponding to a range of wavelengths at which a peak in the spectrum of the optical power source occurs, such that the optical filter acts as a notch filter or a band stop filter.

8. (Previously Presented) An apparatus as claimed in claim 1 wherein the first and second paths are two arms of a Mach-Zehnder interferometer (MZI).

9. (Currently Amended) An apparatus as claimed in claim 1 wherein the optical splitter is tunable and wherein apparatus is sufficiently ~~tunable~~tunable to enable an input signal to be attenuated or amplified by at least 10 dB (measured at the output channel).

10. (Currently Amended) An apparatus as claimed in claim 1 wherein the optical power source is an Amplified Spontaneous Emission (ASK) (ASE) source.